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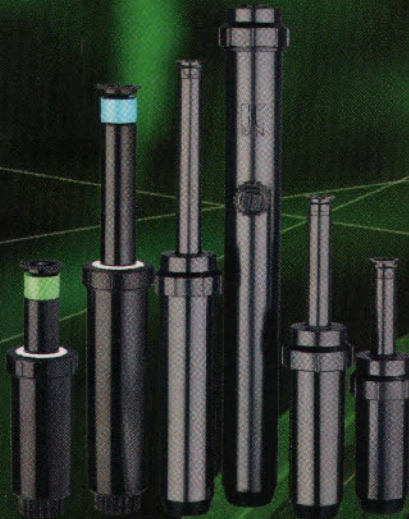
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On the cover: Sand-based field construction is underway!  
Photo courtesy of Alpine Service, Inc., Gaithersburg, MD,  
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From the Sidelines

## Welcome to our new research editor



**ERIC SCHRODER**  
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**W**hile we still haven't decided if the title "Research Editor" is better than "Technical Editor," we have decided that Dr. Scott McElroy, assistant professor of turfgrass weed science for the University of Tennessee, will be heading our continuous search for the best sports turf scientific information available.

Scott, as a good Orange and White staff member would, "volunteered" for this job and we are grateful. It will benefit you tremendously to have an expert turfman to search out the latest relevant research, and by that we mean to bring you information with which perhaps you can turn around and use in your jobs tomorrow.

Scott will be working to present the latest data with those researchers whose output he identifies as being relevant to us, as well as how you can use it. We look forward to working with him to achieve those goals.

Last month I attended a "green industry" trade show, representing this magazine as well as several others our company publishes. It got me a bit fired up for next month's STMA Conference and Exhibition in San Antonio. While STMA's educational sessions get a lot of attention, and deservedly so, the manufacturers' exhibits are also a great source of new information. For example, I had an enlightening conversation with a rep from Toro about using diesel, as well as bio-diesel, fuels. It is these 10-minute informative conversations you can have with vendors in San Antonio that makes attending the Conference even more worthwhile.

As another year winds down (was there ever a truer truism than "Time passes faster the older you get"?), I would like to thank some folks who help make my job easier and produce a better magazine. Mira Coburn is our art director and she has done a fantastic job making this year's issues the easiest reading, most attractive we've had in 22 years. Sutton Annas, our production manager, has brought sanity and efficiency to her job, and publisher Steve Brackett deserves credit for his vision and commitment to our readers.

STMA CEO Kim Heck serves not only as a tremendous resource but also as a strong advocate for her members, and her advice is invaluable. Special thanks also to "Q&A" columnists, Drs. Dave Minner and Grady Miller, for their generous support and expertise, as well as to all the members of the STMA's Editorial Communications Committee, Mike Andresen, CSFM, Chris Calcaterra, CSFM, Tra DuBois, Jeff Fowler, Tom Gmelch, Carl Larson, Larry Rhodes, CSFM, and Jay Warnick, CSFM.

Happiest holidays to all of them, and to all of you.

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**MIKE TRIGG**  
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**T**his past year STMA worked to engage more committee members in its committee system, and I'm happy to report that we surpassed the previous year's involvement. The more than 200 members who participated this year helped us focus on providing value back to members.

Our more than 20 committees and subcommittees developed programs such as the expanded Student Challenge; created tools and resources, such as the Assessment Advisory Bulletin to guide members through the synthetic/natural field decision making process; and directed the governance process to document standard operating procedures for the association. These are just a few accomplishments of our committees. I am very proud of the work undertaken by all of our committees and the leadership of their chairpersons. That brings me to a final request as I hand over the reins in January to Mike Andresen, CSFM: become involved in committee work.

Our organization cannot possibly advance without the support of members. Yes, it is your dues dollars and conference attendance that supplies the means for the association to provide programs and services back to you. However, it is the committee system that ensures those programs and services will meet your needs and provide true value to you.

As noted in the November STMA Electronic Newsletter, the deadline to sign up for committee participation is December 15. However, I have asked headquarters to extend that deadline to December 31, to ensure that you have the opportunity to consider committee service and use the form included in this issue (see page 38).

Our process for placing volunteers on committees is as follows: Members fill out a committee interest form and return it to headquarters by Dec. 31. At the Winter Board meeting, incoming President Andresen will appoint committee chairs. Those chairs will be provided with the information on which committees you are interested in serving, and they will make their recommendations to the STMA Executive Committee (Officers) by Feb. 15. The Executive Committee will make the appointments by the Spring Board meeting, which is typically in March. New to the process this year are "term limits" and limited representation on multiple committees. This means that volunteering isn't a forever commitment! Rather, volunteers will serve one-year terms, with a three-year maximum on a specific committee.

I encourage you to go on line at [www.sportsturfmanager.org](http://www.sportsturfmanager.org) to review the charges of each committee to determine what work excites you. Or, if you are interested in helping out wherever you are needed, just indicate that on the form.

Have a safe and relaxing holiday season!

Mike Trigg



# Managing sand-based athletic fields

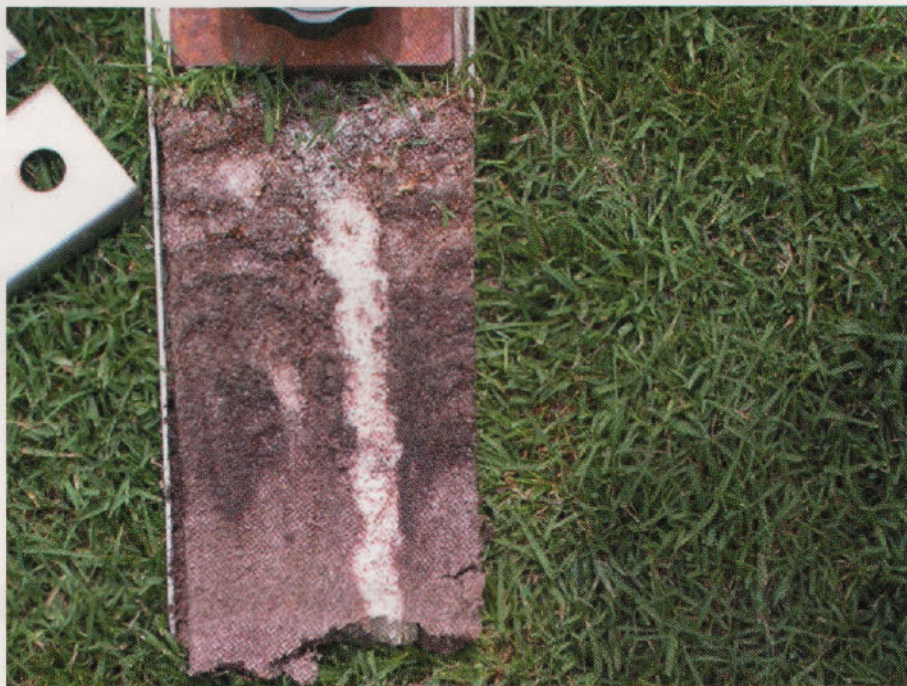
By John Sorochan, Ph.D.

**R**ootzone selection and developing sound management practices are two important components to maintaining quality athletic fields. Specifically, constructing a sand-based athletic field and properly implementing the primary cultural practices of irrigation, mowing, fertilization, and cultivation will help maintain the most consistent turfgrass playing surface.

Generally, the rootzone of an athletic field is either native soil or sand-based. Native soil rootzones high in silt plus clay provide exceptional soil strength (soil stability); however, traffic from play often causes poor drainage and soil compaction. In contrast, sand-based rootzones provide smooth and uniform playing surfaces that resist compaction and have adequate drainage. However, sand-based rootzones typically have low nutrient and water-holding capacities. In addition, sands lack cohesion that can cause stability problems.

Variables to control stability problems associated with sand-based rootzones include: particle size distribution, average particle size, particle shape, soil density, and soil amendments.

A well-graded rootzone in which there is a significant distribution among sand particle sizes is preferred for sand-based athletic fields. Research by Dr. Jason Henderson (Asst. Professor, University of Connecticut) as a graduate student at Michigan State University determined that a sand-based rootzone with 10% silt plus clay will provide both soil stability and adequate drainage for athletic fields. The sand content root zone near maximum density will retain macro pore space (air-filled pores) for rapid drainage, and the addition of about 10% silt plus clay will provide the soil stability and the increase in nutrient and water holding capacity. Unfortunately, the high costs and the quality of available native soil to mix with the sand rootzone can often limit blending the two.



Campbell used deep tine drill and fill to create a series of channels, backfilled with the original sand blend, for water infiltration.

In contrast to athletic fields, the United States Golf Association specifications for putting green construction limit the amount of silt plus clay percentages (not more than 5 and 3%, respectively) that can be used in order to provide the desired infiltration (drainage) rates. In addition, very fine sand can not be more than 5%, and the very fine sand and silt plus clay can not be over 10% of the total rootzone mix.

Because the expectations for the use of an athletic field playing surface are extremely different than that of a putting green surface, it makes sense that Dr. Henderson's research recommends slightly higher percentages of silt plus clay. The higher silt plus clay percentages reduce soil infiltration rates, but provide firmer and more stable playing surfaces.





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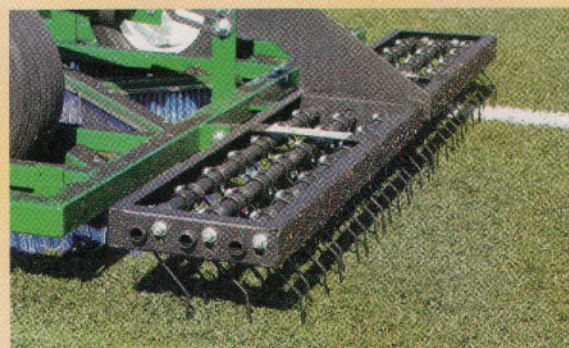
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In addition to building a sand-based athletic field properly, implementing the primary cultural practices of irrigation, mowing, fertilization, and cultivation will help maintain the most consistent turfgrass playing surface. Typically, sand-based athletic fields require more frequent irrigation compared to a native soil athletic field because of the low water holding capacity.

Turfgrass water requirements will vary depending on the time of year and weather conditions. Actively growing turfgrasses will generally require about 1 to 1 1/2 inches of water per week. The water used by a turfgrass

rootzones should be more light (low N) and frequent if using water-soluble nitrogen fertilizers because of the low nutrient holding capacity. Using slow release nitrogen fertilizers such as polycoated urea can reduce application frequencies and allow for increased nitrogen rates.

Mowing should be done regularly enough to not exceed the one-third rule. This rule states that no more than one third of the leaf material should be removed at any mowing. Optimal mowing heights for cool-season athletic fields (Kentucky bluegrass and perennial ryegrass) are between 1 and 2 1/2 inches and

## TYPICALLY, SAND-BASED ATHLETIC FIELDS REQUIRE MORE FREQUENT IRRIGATION COMPARED TO NATIVE SOIL ATHLETIC FIELDS BECAUSE OF THE LOW WATER HOLDING CAPACITY.

plant is predominantly absorbed by the roots from the soil and can be supplied via natural rainfall events and supplemental irrigation.

The amount of water that needs to be applied by supplemental irrigation will depend on how much water is available in the soil and how much the turfgrass demands. For example, irrigation applications will be more frequent during sunny days with high temperatures, low humidity, and high winds then during cloudy days where humidity levels are high and temperatures are cool. Thus, any factor that contributes to the turf transpiring more (using more water) and the soil losing moisture via evaporation would warrant increased irrigation scheduling. Therefore, it would not be accurate to suggest irrigation once, twice, or three times per week because weather patterns change frequently. Instead, irrigation requirements should be monitored daily for turf watering needs.

Soil nutrient tests should be conducted regularly and subsequent fertilizer applications should be done for any nutrient deficiencies that occur. Nitrogen fertility for sand-based

3/4 to 1 and 1/4 inches for warm-season athletic fields (bermudagrass and zoysiagrass). In addition, regular mower maintenance including reel or blade sharpening will assure that the highest quality of cut.

Turfgrass vigor increases with the proper implementation of irrigation, fertility, and mowing practices; therefore, as turfgrass vigor increases, irrigation, fertility, and mowing requirements also increase. Sand-based athletic fields typically do not become compacted; however, layering problems as a result of organic matter accumulation often occurs over time. Regular cultivation practices of aeration and topdressing are required to dilute organic matter accumulation and potential layering problems that buildup.

Whether it is Kentucky bluegrass or bermudagrass, organic matter accumulates as a result of decomposing roots, rhizomes and/or stolons, and clippings contribute to an increase in organic matter at or near the rootzone surface that can over time impede infiltration rates. This problem is especially pronounced on overseeded bermudagrass